

REMARKS

Claims 1-3, 5-8, 11-17, 21, 23-24, 26-28 and 30 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Ashok M. Joshi (U.S. Pat. No.5,414,839), hereinafter Joshi, in view of Seungyoon Peter Song (U.S. Pat. Pub. No. 2003/0093652), hereinafter Song. Claims 9, 10, 18, 20 and 29 were rejected under 35 U.S.C § 103(a) as being obvious in view of Joshi, in view of Song, and further in view of Chan et al. (U.S. Pat. No. 6,108,654), hereinafter Chan.¹

By this amendment claims 1, 12, 20, 21, and 26 have been amended.² Accordingly, claims 1-3, 5-18, 20-21, 23-24, and 26-30 are pending, of which claims 1, 12, 20, 21 and 26 are the only independent claims at issue.

The present application is generally directed to acquiring and releasing locks on database resources. With multi-thread and multi-processor computing, often the possibility of different applications performing conflicting accesses to resources in a database is present. To combat this, transactional computing techniques have been developed. A transaction is a set of operations that are either all performed atomically or aborted and rolled back such that none of the operations appear to have been performed. Transactional computing may be performed by using locks on data items. When one application begins a transaction, a lock will be placed on some resources that prevents other applications from conflicting accesses on the data in the resources, such as by preventing the other applications from modifying or using the data. Once the transaction is completed, the lock is released such that the data in the locked database resource can then be read or modified by other applications.

The claims of the present application have been amended to more fully clarify locking and lock releasing functions.

Applicants respectfully submit that the cited art of record does not anticipate or otherwise render the amended claims unpatentable for at least the reason that the cited art does not disclose, suggest, or enable each and every element of these claims.

35 U.S.C. 102 and 103 Rejections

¹ Although the prior art status of the cited art is not being challenged at this time, Applicant reserves the right to challenge the prior art status at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.

² Support for the amendments to the claims and for the new claims is found throughout the specification and previously presented claims, including but not limited to page 2, lines 9-13.

Each of the independent claims was rejected on Joshi in view of Song. However, this rejection is improper for at least two reasons. The first reason is that the cited art does not show each and every element of the claims. The second reason is that an appropriate motivation to combine the references has not been stated. Indeed the cited portions of Joshi and Song are wholly unrelated and are directed towards completely different functions such that one of skill in the art would not have been motivated to make the combination.

With regard to the first reason, each of the claims recites elements related to a parent lock being associated with a reference count of the number of child locks on resources in a database. The locks prevent other applications from modifying data or using data which may not be accurate. The reference count is decremented as child locks are released, and when all of the child locks have been released, the parent lock is released such that data in the previously locked resources can be modified or used by other applications.

As admitted in the Office Action, for each of the independent claims, Joshi fails to teach decrementing the reference count or means for doing so. Rather, the Office Action cites to Song, and in each case for each of the independent claims cites to Song at page 2, paragraph [0022] and further states that "free" and described by Song is analogous to release. However, applicant strongly traverses this characterization, as an entry being "free" as defined by Song is significantly different from a lock being released on a resource as defined by the claims of the present application. In particular, the current amendments clarify that releasing a lock on a resources is done such that data in the previously locked resources can be at least one of modified or used by another application.

In contrast, Song describes a system of registers and buffers. See Song at Abstract. In particular, Song is directed to a pipelining system where instructions may be processed out of order and using buffers and pointers to keep the results of any prematurely executed instructions in temporary storage for future result forwarding. See Song at [0006]. Song further notes that "[w]hen an instruction that modifies a destination register is decoded, a free operand queue entry is assigned to hold the future value of the destination register by writing the free entry number into the register's future state pointer and incrementing the reference counter associated with the free entry by 1. A free entry has the reference count of 0, indicating no register is referencing this entry. When there is not a free entry the instruction is stalled until one becomes free." Thus, "free" as described by Song refers to empty storage locations where future values can be stored.

In contrast, resources with a lock released are not free or empty storage locations, but rather are locations that contain data, but which now can be read or modified by other applications. Thus, Song fails to teach or suggest parent locks being released "such that data in the previously locked resources can be at least one of modified or used by another application."

Further, in combining Joshi and Song, the Office Action states that "[i]t would have been obvious to combine the cited references because Song's teaching of reference count decrements by a value of one would have allowed Joshi's system to keep tack (sic) of the entries in a queue." However, this reasoning is unsound inasmuch as the teachings of Joshi used in the rejection of the present claims are not related to queues, but rather to record locking. While Joshi may disclose transaction ordering queues, these teaching were not used in the rejection of the present claims, and combining the free entry queue features of Song with the transaction ordering queue features of Joshi does not result in the modification of the record locking disclosed by Joshi. At best it results in a modification of the queue features taught by Joshi if such combination is even technically possible. Further there is no evidence that one would be motivated to combine the queue features of Song to wholly unrelated record locking features of Joshi.

Additionally, the Office Action's stated reasoning for combining Joshi and Song does not comply with the requirements in view of recent Supreme Court precedent as set forth in the MPEPs discussion of *KSR v. Teleflex* 550 U.S. 398 as discussed at MPEP 2141 and 2143. In particular:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. ...[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

A number of rationales are given in MPEP 2141 and 2143³, however, the statements made for combining the references do not appear to fall into any of these rationales. Further, once a

³ The rationales listed include: (A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F)

rationale is identified, there are a number of finding of fact, which must be made explicit for the combination to be proper. For example, if a rejection is being made on the rationale of a simple substitution of one known element for another to obtain predictable results, Office personnel must resolve the *Graham* factual inquires and articulate the following:

- (1) a finding that the prior art contained a device (method, product, etc.) which differed from the claimed device by the substitution of some components (step, element, etc.) with other components;
- (2) a finding that the substituted components and their functions were known in the art;
- (3) a finding that one of ordinary skill in the art could have substituted one known element for another, and the results of the substitution would have been predictable; and
- (4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

"If any of these finding cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art." Inasmuch as no rationale has been stated, the appropriate finding have not been identified, articulated, or made. Thus, no motivation to combine has been properly articulated.

In view of the foregoing, Applicant respectfully submits that the other rejections to the claims are now moot and do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicant acquiescing to any of the purported teachings or assertions made in the last action regarding the cited art or the pending application, including any official notice. Instead, Applicant reserves the right to challenge any of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicant specifically requests that the Examiner provide references supporting the teachings officially noticed, as well as the required motivation or suggestion to combine the relied upon notice with the other art of record.

Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at (801) 533-9800.

Dated this 17th day of July, 2009.

Respectfully submitted,

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